

One Source

Securing the alternative fuel supply chain

The alternative fuels dilemma

An increasing number of cement plants want to burn alternative fuels (AF). As the price of conventional fuels increases, plants can save considerable costs using AF, and it is also becoming increasingly important to be able to comply with environmental regulations. However, many plants hesitate to invest in an AF upgrade because of uncertainty about maintaining a reliable AF supply.

FLSmidth collaborates closely with customers at all stages of an AF upgrade, providing expert process knowledge and the latest AF technology and equipment. By designing tailored solutions to match customers' specific needs, FLSmidth helps plants achieve up to 100% AF substitution in a safe, reliable and environmentally compliant way.

Teamwork secures AF supply

Recognising that plants must secure a long-term source of fuel - an aspect of AF utilisation that can be particularly challenging - FLSmidth has teamed up with the Evolution Environmental Group (E2) to develop and improve the AF supply chain. This agreement provides complete value for

customers, ensuring they receive a quality, uninterrupted supply of AF.

E2 has over 35 years of experience in the AF industry, providing complete waste management services including remediation and processing of legacy wastes into supplemental fuels. E2 sources, engineers, provides all logistics and quality control, and prepares AF for plants according to desired chemical properties and quality parameters.

The partnership between FLSmidth and E2 means that customers can secure a guaranteed supply of AF before investing in a plant upgrade.

"Our agreement with E2 is an example of FLSmidth's belief in working alongside our customers every step of the way to find the right solution – in this case a solution that includes future fuel supply. We find that the best solutions and the greatest improvements come from teamwork and collaboration."

Robert Shenk, General Manager of
Global Customer Service Projects, FLSmidth



Feeding a mobile unit - USA

Complete package

Working together with E2 enables FLSmidth to provide a complete package of services, from the first feasibility study of how and where AF can be utilized in specific plants, to designing the right upgrade solution and securing a reliable fuel supply.

An example of the benefits of this partnership approach can be seen at the Titan America - Pennsuco Plant in Florida. Pennsuco wanted an AF upgrade – but first they wanted clear proof of the benefits.

FLSmidth and E2 provided a simple and cost-effective solution using a two-step approach: A temporary, portable volumetric unit tested the supply chain of locally available materials and demonstrated excellent results, which allowed Pennsuco to install permanent equipment, confident that they would receive an uninterrupted supply of quality AF.

This step-wise approach tests solutions and establishes what is possible, quickly helping customers gain benefits. It demonstrates that plants can reliably use AF, removing uncertainty over future fuel supply.

FLSmidth's expertise, combined with the agreement with E2, enables customers to confidently invest in an AF upgrade.

"Aligning ourselves with the global leader in equipment and services to the cement and minerals sector gives E2 the opportunity to provide assurance of sustained outlets for pre-processed alternative energy products. FLSmidth's innovative solutions are the final link in the chain to offer 'win-win' scenarios to the community, by providing 'zero waste' alternatives combined with cost reduction and environmentally friendly solutions for large energy consumers."

Herbert Case,
Evolution Environmental Group (E2) CEO



Alternative fuel double-docking station in operation – Italy

Alternative fuels value chain

REGULATORS / GOVERNMENT

SOURCE

Residential, commercial or industrial waste

WASTE COLLECTOR

Collect, sort, distribute, and possibly pre-process

CEMENT PRODUCER

Consumer of the fuels; May participate or play lead role during initial preparation and handling. Process determines the specifications for type, size and composition of fuels.

DISTRIBUTOR / PROCESSOR

Distribute waste, may also prepare to meet specifications of user. Can be separate consulting company or function performed by waste handler

EVOLUTION ENVIRONMENTAL GROUP (E2)

FLSMIDTH

Provide solutions & technology for receipt, storage, handling, and combustion. Consulting services to assess & emissions perspective to guide the fuel



WASTE



COLLECTION



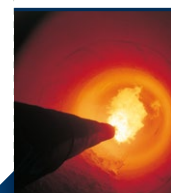
INITIAL PREP & QUALITY CONTROL



TRANSFER



FINAL PREP & QUALITY CONTROL



COMBUSTION



oving, handling, storage, combustion, and emissions
the impact to the process from a quality, chemistry, corrosion
l preparation and handling prior to receipt at the plant.



EMISSIONS



CLINKER



RDF and SRF Bales - United Kingdom



Processed Engineered Fuel - Bulgaria

Complete alternative fuel solutions

FLSmidth has teamed up with Evolution Environmental Group (E2) to help secure the alternative fuel supply chain for customers investing in plant upgrades. Offering complete, tailor-made solutions, FLSmidth helps plants achieve up to 100% alternative fuel substitution in a safe, reliable and environmentally compliant way.

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